

**CLAIMS:**

## Claims

- 1 The use of a peptide comprising all or an immunogenic part of the amino acid sequence designated SEQ ID NO 6 in the manufacture of a vaccine to stimulate an immune response against COA-1 (SEQ ID NO 2).
- 2 Use according to claim 1, wherein the immunogenic part of the sequence comprises 8 or more contiguous amino acid residues of SEQ ID NO 6.
- 3 Use according to claim 2, wherein the immunogenic part of the sequence comprises 10 or more contiguous amino acid residues of SEQ ID NO 6.
- 4 Use according to any preceding claim, wherein the immunogenic part of the sequence comprises SEQ ID NO. 9 at the N-terminus and/or SEQ ID NO. 10 at the C-terminus.
- 5 Use according to claim 1, wherein the immunogenic part of the sequence consists of SEQ ID NO 6.
- 6 Use according to any preceding claim, wherein the immune response is stimulated against Colorectal Cancer cells.
- 7 Use according to any preceding claim, wherein the peptide is an oligopeptide.
- 8 Use according to any preceding claim, wherein the immunogenic part of the sequence is processed and expressed by antigen presenting cells in association with sympathetic MHC class II molecules.
- 9 Use according to claim 8, wherein the MHC class II molecules are the HLA DR $\beta$ 1\*0402 and/or HLA DR $\beta$ 1\*1301 alleles.
- 10 Use according to any preceding claim, wherein the vaccine further comprises PBMC's (Peripheral Blood Mononuclear Cells) either expressing the HLA DR $\beta$ 1\*0402 and/or the HLA DR $\beta$ 1\*1301 alleles.
- 11 A peptide comprising the amino acid sequence designated SEQ ID NO 6, wherein an immunogenic response is raised by administration thereof.
- 12 A peptide as defined in any of claims 2-5.

- 13 A peptide consisting of a peptide as defined in any of claims 2-5
- 14 A polynucleotide encoding a peptide, as defined in any preceding claim.
- 15 A vaccine comprising a peptide, as defined in any preceding claim.
- 16 A vaccine according to claim 16 comprising a suitable carrier.
- 17 A vaccine according to any of claims 15-16, comprising the peptide and PBMC's expressing a sympathetic MHC Class II allele therefor.
- 18 A vaccine according to claim 17, wherein the MHC Class II allele is the HLA DR $\beta$ 1\*0402 and/or the HLA DR $\beta$ 1\*1301 allele.
- 19 A host cell expressing a peptide as defined in any of claims 1-16.
- 20 An antibody raised against a peptide as defined in any of claims 1-16.
- 21 A method for stimulating immunity against colorectal cancer, comprising stimulating the production of antibodies against a peptide, as defined in any of claims 1-16.
22. A method according to claim 21, wherein immunity is stimulated in the patient in conjunction with PBMC's allogeneic or autologous for at least one sympathetic HLA-II allele capable of presenting all or an immunogenic part of the amino acid sequence designated SEQ ID NO 6 in an immunogenic manner.
23. A method according to claim 22, wherein the allele is selected from HLA DR $\beta$ 1\*0402 and HLA DR $\beta$ 1\*1301.
24. A method according to any of claims 21-23, wherein the patient has PBMC's autologous or allogeneic for at least one sympathetic HLA-II allele capable of presenting the COA-1 epitope in an immunogenic manner, the method comprising administering a vaccine comprising the immunising portion of COA-1, or a precursor therefor, as defined in any preceding claim, to the patient.
25. A method for stimulating immunity to colorectal cancer in a patient, said method comprising
  - i) isolating PBMC's or their progenitors from the patient and transforming said cells with at least one sympathetic HLA-II allele capable of presenting the COA-1 epitope in an immunogenic manner,
  - ii) introducing the transformed PBMC's back into the patient, and

iii) administering a vaccine comprising the immunising portion of COA-1, or a precursor therefor, as defined in any of claims 1 to 16, to the patient.

26. A method according to claim 25, wherein the immunising portion of COA-1, or a precursor therefor, is administered with the transformed PBMC's.

27. A passive vaccine comprising an antibody according to claim 20.

28. A diagnostic assay for colorectal cancer comprising an antibody according to claim 20.

29. Use according to any of claims 1-4, wherein the immune response is stimulated against melanoma cells.